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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,865	08/09/2004	Rachelle Bentley	NOR-1162	4864
37172 7590 02/22/2007 WOOD, HERRON & EVANS, LLP (NORDSON) 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202			EXAMINER AFTERGUT, JEFF H	
			ART UNIT	PAPER NUMBER
			1733	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/22/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/22/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/710,865

Applicant(s)

BENTLEY ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) 10-19 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 20-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11-4-05, 12-6-04, 11-26-04</u> | 6) <input type="checkbox"/> Other: ____ |

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species: The species of Figure 2 where the layers are all formed one onto the other or the species of Figure 4 where the bottom backsheet layer was formed independently of the other layers and then later secured to the other layers. The species are independent or distinct because the processes are mutually exclusive one another because the backsheet is either formed in line with the other layers or it is formed separate of the other layers and then later joined to the same.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

2. During a telephone conversation with Kevin Rooney on 2-12-07 a provisional election was made with traverse to prosecute the invention of the species of Figure 2, claims 1-9 and 20-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-19 and 30-34 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7 and 20-25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen '615 in view of Fleissner '971.

Allen '615 describes a process and system for forming a disposable hygienic absorbent product which included forming a bottom layer at a bottom layer forming station 202 having a melt spinning die 214 configured to form a first layer of filaments to form a substantially liquid impermeable bottom layer 238, a core forming station 203

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having a second melt spinning die 240A for example for build up of the core, an acquisition layer forming station which was part of the core forming station 203 which included a third spinning die 240C which applied coarser fibers via a melt spinning operation in order to provide an acquisition layer on the core arrangement, as well as a top layer forming station 201 which included a melt spinning die 207 arranged to discharge a fourth layer of filaments which are liquid permeable. The references taught that the layers of fibers so formed in line were combined at a combining station 205 which included the use of adhesive or thermobonding (column 11, lines 44-45, for example). The reference to Allen '615 failed to teach that those skilled in the art would have employed a thermobonding operation which incorporated a through air bonding process wherein heated air was used to join the layers together in order to form the composite absorbent fibrous laminate.

However, in the art of thermobonding of nonwoven layers of material, it was notoriously well known at the time the invention was made to employ through air bonding processes to apply heat to the nonwoven in order to facilitate the bonding of the fibers therein in the formation of the composite. The reference to Fleissner '971 taught that it was known at the time the invention was made to employ a binder to join a fibrous mat together, however the use of a binder resulted in a nonwoven having insufficient strength (column 1, lines 29-42). Fleissner '971 also suggested that those skilled in the art knew to incorporate powder or granular agents within the web to facilitate the bonding operation however such was difficult as the application of the particulate into the nonwoven was difficult to attain uniform coating in the web. Fleissner

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'971 also stated that the inclusion of melt fibers within the nonwoven itself was known as well and suggested that one skilled in the art utilize the same with a thermal bonding operation where the fibrous material was passed over and under and plurality of perforated suction drums 12. As the fiber assembly was passed over and under the assembly of suction drums 12 the air in the drier assembly was heated so that hot air was pulled through the nonwoven to heat the thermoplastic fibrous material therein to bond the web together. In this fashion one was able to achieve a bonded web which had superior strength as the nonwoven web had the thermoplastic melt fibers spread throughout the assembly and the heating was uniformly distributed throughout the web in the hot air drier. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the techniques of Fleissner '971 to provide for the thermal heating (thermobonding) of the nonwoven assembly of Allen '615 when making a composite absorbent article as the use of thermobonding was clearly suggested by Allen '615 and the reference to Fleissner '971 suggested a useful means for thermobonding of a nonwoven which resulted in superior strength in the finished assembly when compared to adhesive bonding.

With regard to claims 2 and 21, note that the reference to Allen '615 suggested that one skilled in the art would have incorporated plural layers for forming the core and additionally that plural layers were suitable for the backsheet. Application of the plural layers was provided with melt spinning devices therein. Clearly incorporation of a fifth and sixth device were provided for in the reference. Note that one would have understood that 240B was a suitable device for application of a core containment layer

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for the core formed via the device 240A and that device 216B clearly provided an additional melt-spinning device for retaining the core component formed by device 240A in the assembly. regarding claim 3, note that Allen suggested the use of layers formed by melt spinning devices 216A and 216B to provide additional layers to the backsheet assembly. regarding claim 4 note that the reference to Allen '615 suggested that the melt spinning dies are all multicomponent filament-spinning dies. Regarding claim 5, note that one skilled in the art would have readily appreciated that the dies of Allen '615 would have been provided with the ability to melt spin different thermoplastic materials in order to provide the disposable diaper component with the desired properties therein, i.e. the backsheet would have been made from a different material than the topsheet as was known in the art, for example. Additionally, note that Allen '615 suggested that blends of resins were useful in the meltblowing operation. the formation of bicomponent fibers in a meltblowing or spunbonding operation for manufacture of a layer in a disposable diaper is taken as conventional in the art. Note that Fleissner '971 suggested that low melting point material would have been used to join the fibers of the material together with the heating technique involved. Regarding claim 6, see the comments above regarding claims 4 and 5. regarding claims 7 and 25, note that Fleissner '971 suggested at least two suction rolls which directed air through the assembly from opposite sides as the assembly traveled from one drum to the next and the artisan would have readily appreciated that the through air devices were independently adjustable. Regarding claims 22-24, note that the reference to Allen '615 suggested that one skilled in the art would have utilized multicomponent blend of material for the

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meltblowing operation (and such multicomponent fibers were known in diaper manufacture per se as providing useful materials therein). The reference to Fleissner '971 suggested that such multicomponent materials would have included a low melting point component therein in order to facilitate the bonding operation. Regarding claim 29, incorporation of non-fiberized absorbent material in a core of an absorbent diaper is taken as conventional in the art and would have been provided in order to increase the absorbency of the finished assembly.

6. Claims 8, 9, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 5 further taken with Fleissner '988.

The references as set forth above suggested that those skilled in the art would have utilized a thermobonding operation to attach the fibers of the nonwoven together, however there is no indication that one skilled in the would have controlled the suction of the operation in order to vary the amount of pressure and heating applied by the suction device in order to provide for the proper bonding of the arrangement. The ordinary artisan would have known to apply a vacuum fan which was capable of varied operation in order to vary the amount of heat applied to the assembly as the assembly was passed through the through air bonder as taught by Fleissner '988. Applicant is more specifically referred to column 4, lines 17-28 of the reference. Clearly, in order to provide one with the ability to provide the desired bulk to the finished assembly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide one with the ability to control the application of heat by varying the speed of the fan used in the suction of the hot air in the through air heater as suggested by

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Fleissner '988 as useful to ensure adequate pressure during bonding as well as maintaining a good density in the finished assembly in the process of making a disposable absorbent article as set forth above in paragraph 5.

Applicant is advised that one skilled in the art would have known how to regulate the hot air in order to effect bonding whereby one would have understood how to regulate the fan such that there was different airflow along the length and width of the fiber assembly as a function of the desired degree of compaction and the finished density in different zones one wished to attain. Additionally, one skilled in the art would have understood that the use of a pattern on the perforated drums would have impacted the degree of airflow in the thermal bonding operation and the manner in which one provided the same would have been determined through routine experimentation.

Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Street taught the use of two perforated drums in a through air bonding arrangement. Deffenbaugh et al suggested the use of a calendar bonding followed by through air bonding in order to improve tensile strength of the nonwoven as well as impart better absorption for the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
February 15, 2007